## Q&A

# Green Power Switch®

*The switch is on . . .*

Green Power Switch®

### What is Green Power Switch?

Green Power Switch is a renewable energy initiative that offers consumers in the Tennessee Valley a choice in the type of power they buy. TVA and local public power companies, working in cooperation with the environmental community, developed Green Power Switch as a way to bring green power—electricity that's generated by cleaner, renewable resources such as solar, wind, and methane gas—to Valley consumers.

### How much does Green Power Switch cost?

Green Power Switch is sold to residential consumers in 150-kilowatt-hour blocks (about 12 percent of a typical household's monthly energy use). Each block adds $4 to the customer's monthly power bill. Consumers can buy as many blocks as they like. (In other parts of the country, residential customers who participate in green power programs pay an extra $2 to $10 per month for green power.) Green Power Switch is also marketed to commercial and industrial customers, who are asked to buy blocks based on the amount of energy they use.

### How does green power benefit the environment?

The environmental impacts of traditional energy sources like coal, natural gas, oil, and nuclear power can be significant. Although no source of energy is impact-free, renewable resources create less waste and pollution. In fact, an investment of an additional $8 per month on your power bill buys enough Green Power Switch to equal the environmental benefits of planting an acre of trees in the Tennessee Valley.

### Why does green power cost more?

Although renewable sources like sunlight and wind are free, the technology used to capture the energy they produce is still more expensive than traditional power generation methods. Increased demand may lead to expanded power production capacity and eventually to lower costs.

### Where are Green Power Switch's generation sites located?

TVA has built the first commercial wind-powered turbines in the southeastern U.S. on Buffalo Mountain in Anderson County, Tennessee. Solar generation sites are located in the service areas of participating public power companies. And methane gas from the City of Memphis wastewater treatment facility is provided to TVA's Allen Fossil Plant as an additional source of generation.

### How much electricity does Green Power Switch produce?

TVA has the capacity to provide as much as 97 million kilowatt-hours of green power annually. Physical laws determine where electricity is ultimately used, so power from these cleaner sources will go into TVA's electric system as part of the Valley's total power mix, rather than to individual homes or businesses. When the green power resources aren't operating—for instance, when wind speeds are too low to generate energy—TVA's other resources will continue to supply reliable electricity.

### How many consumers does Green Power Switch serve?

Green Power Switch can provide enough electricity to supply one block, which equals 150 kWh, a month for about 54,000 Tennessee Valley homes, plus an ample supply of energy for participating businesses and industries.

### How do I sign up for Green Power Switch?

If you get your electricity from one of the participating public power companies, call its customer service office to sign up.

For more information, visit us online at **www.greenpowerswitch.com.**

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## Solar power

Solar energy is generated by photovoltaic (PV) systems, which consist of semiconductor cells that convert sunlight into electricity. PV cells are connected in flat panels that can be mounted on rooftops or integrated into other building materials. Depending on the season, PV systems will ordinarily generate power from 8 a.m. to 6 p.m., reaching their maximum output between noon and 1 p.m. Solar is one of the most expensive sources of energy. For example, a typical coal-fired generating unit currently produces electricity for less than two cents per kilowatt-hour. The cost using solar sources is about 60 cents per kilowatt-hour.

## Wind turbine energy

Modern wind machines consist of a tower, a turbine and switchgear, and rotor blades. Wind turbines transfer the wind's momentum to the rotor blades and localize that energy in a single rotating shaft. Wind speed varies according to the time of day, season, height above ground, and terrain. Proper siting in a breezy location away from large obstructions enhances the turbines' performance. Electricity produced by wind power still costs several times more than that produced by common sources like coal, ranging from six cents to a little over 11 cents per kilowatt-hour.

## Methane gas energy

Methane gas, which consists mainly of methane and carbon dioxide, is produced when organic wastes decay. Generators at methane gas sites are very reliable and operate almost year-round, with little downtime. A six-megawatt plant can produce approximately 47 million kilowatt-hours per year, or enough to supply about 3,200 homes. The cost of producing electricity is between three and four and a half cents per kilowatt-hour.

For more information, visit us online at
**www.greenpowerswitch.com.**